

TWO NEW SPECIES OF FALSE SPIDER CRABS (CRUSTACEA: BRACHYURA: HYMENOSOMATIDAE) FROM NEW CALEDONIA

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Davie, P.J.F. & Richer de Forges, B. 1996 07 20: Two new species of false spider crabs (Crustacea: Brachyura: Hymenosomatidae) from New Caledonia. *Memoirs of the Queensland Museum* 39(2): 257-262. Brisbane. ISSN 0079-8835.

Two new species of Hymenosomatidae are described from estuarine habitats on the west coast of New Caledonia. *Odiomaris estuarius* sp. nov. is most closely allied to the endemic New Caledonian *O. pilosus* (A. Milne Edwards, 1873). *Neorhynchoplax euryrostris* sp. nov. is unique in the genus with its prominent, broad, unilobate rostrum. □ *Brachyura, Hymenosomatidae, Odiomaris, Neorhynchoplax, New Caledonia.*

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The Hymenosomatidae has been relatively little studied, probably due to their small size and cryptic habit. Lucas (1980) and Lucas & Davie (1982) described 13 species from Australia, indicating that family diversity had probably been seriously underestimated. Ng & Chuang (1996) provided the first overview of the Southeast Asian fauna, recognising 24 species in 10 genera (including 8 new species), making 15 new species described from Southeast Asia since 1988 (Ng, 1988, 1991; Chuang & Ng, 1991). Thus the New Caledonian fauna could be expected to harbour some undescribed species. Ng & Richer de Forges (1996) reviewed the hymenosomatid fauna of New Caledonia, establishing two new genera and describing two new species. During mangrove and intertidal collecting in December 1993 we found 2 new species living under logs and rocks in two estuaries north of Noumea, on the west coast of New Caledonia.

SYSTEMATICS

Abbreviations used in the text are: MNHN, Muséum national d'Histoire naturelle, Paris; QM, Queensland Museum, Brisbane; c.b., carapace breadth; G1, male first gonopod.

Class CRUSTACEA
Order DECAPODA
Suborder BRACHYURA
Family HYMENOSOMATIDAE

Odiomaris estuarius sp. nov.
(Figs I, 2A, C)

MATERIAL EXAMINED. HOLOTYPE MNHN B25278, ♂ (4.6 x 4.3 mm), Dumbea estuary, New

Caledonia, 8.12.1993, P. Davie & B. Richer de Forges. PARATYPES MNHN-B25275, 4 ♂ (4.7 x 4.4; 4.0 x 3.6; 3.6 x 3.4; 2.7 x 2.7 mm), 4 ♀ (5.4 x 5.0; 4.1 x 3.9; 4.0 x 3.5; 3.8 x 3.4 mm). QMW20576, 5 ♂ (4.8 x 4.4; 4.1 x 3.9; 4.0 x 3.7; 3.0 x 3.0; 2.5 x 2.4 mm), 5 ♀ (6.2 x 5.8; 4.9 x 4.4; 4.3 x 4.0; 3.6 x 3.3; 3.4 x 3.1), same data as holotype.

DESCRIPTION. Carapace subcircular, width 1.0-1.14 (mean=1.08) times length (including rostrum); dorsal carapace surface flat to slightly convex, with gastro-cardiac, cervical and thoracic grooves; thoracic grooves short, angled laterally; anterolateral and posterolateral angles not indicated; carapace rim broad, minutely granular; branchiostegites nearly vertical, sloping out ventrally near last walking legs; rostrum spatulate; eyes prominent, corneas swollen; postocular lobes relatively small in size, not prominent in dorsal view, affording little protection for corneas; lower margin of orbital cup with inner and outer blunt knobs; antennules concealed in dorsal view when flexed; interantennular septum narrow; rostral keel indistinct, rostrum broadly rounded in frontal view; epistome short; upper ridge of pterygostomial region prominent, becoming broken posteriorly, elevated on either side of pterygostomial and branchiostegite junction anterior to cheliped bases; surfaces of pterygostome and branchiostegite granular; Milne-Edwards' apertures normal.

Mouth field wider than long, almost completely filled by 3rd maxillipeds; ischium of 3rd maxillipeds shorter than merus along lateral edge, palp not reaching ischio-merus junction, exopod only visible proximally. Length of chelipeds in available males, and females, subequal to carapace

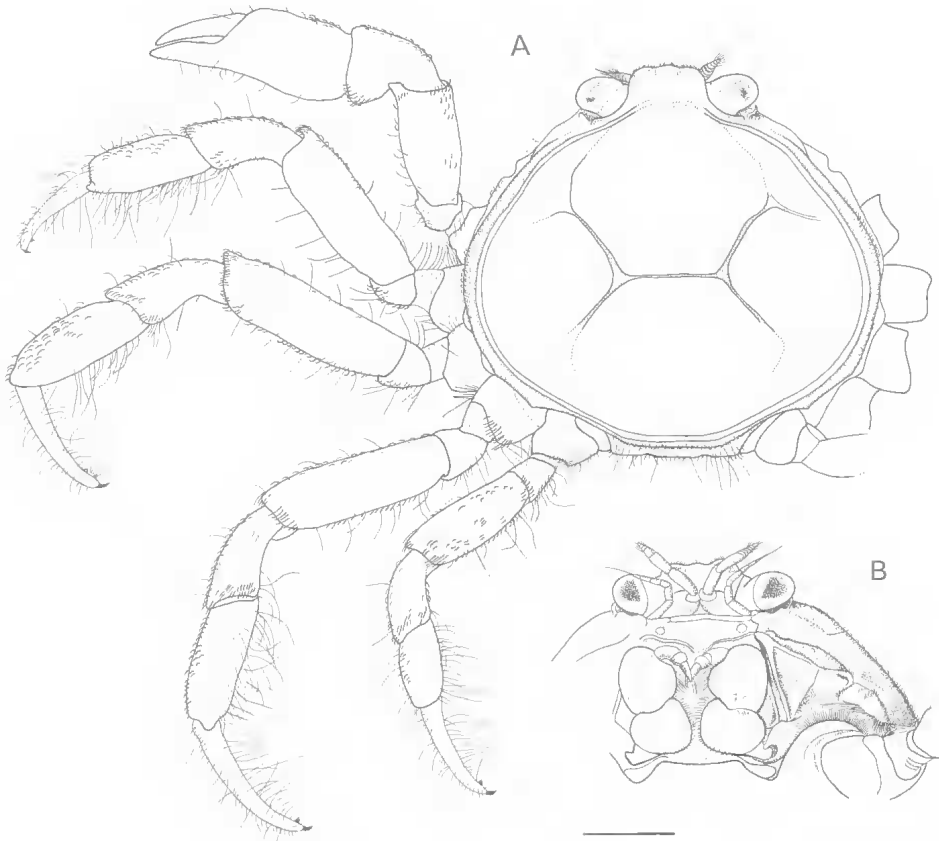


FIG. 1. *Odiomaris estuarius* sp. nov., holotype male. A, dorsal view; B, frontal view. Scale line = 1 mm.

breadth; only slightly stouter than largest walking legs; outer surfaces sparsely setose, and minutely granular; propodus of largest male (holotype) not inflated, similar to females, without ventral keel; fingers curved, without marked proximal gape, cutting margins bearing minute teeth only. Length of walking legs c. 1.4 times carapace width in both males and females, legs moderately thick, dactyli distinctly longer and more slender than propodi, densely setose, slightly curved, with distinct subterminal tooth.

Female abdomen oval, convex, with 2 deep, sinuous, submedial grooves running entire length, defining a convex central region; segments 1-5 progressively longer and broader, with base of telson forming greatest width; telson arcuate, c. 1.75 times longer than segment 5; eggs c. 0.4 mm diameter. Male abdomen with segments 1 and 2 shorter and broader than segments 3-5, segment 3 next shortest, segments 4 and 5 of similar length, tapering to telson, telson bluntly triangular, c. twice length of segment 5; interca-

lated plates laterally at base. Male G1 stout, with 2 distinct distal processes, a longer corneous process and a shorter lobular elongation of stem; conspicuously setose particularly on the disto-abdominal face.

Body coloured light brown (alcohol preserved specimens), often with a thin caked-on layer of very fine sediment; feathered setae, often thick with sediment, around mouth frame, Milne-Edwards' aperture, on walking legs, around edge of female abdomen.

HABITAT. Under logs in estuary.

DISTRIBUTION. Only known from the type locality on the west coast of New Caledonia.

ETYMOLOGY. For its estuarine habitat. Its only congener lives in freshwater.

REMARKS. *Odiomaris* Ng & Richer de Forges, 1996, was erected for a freshwater species from New Caledonia, *O. pilosus* (A. Milne Edwards,

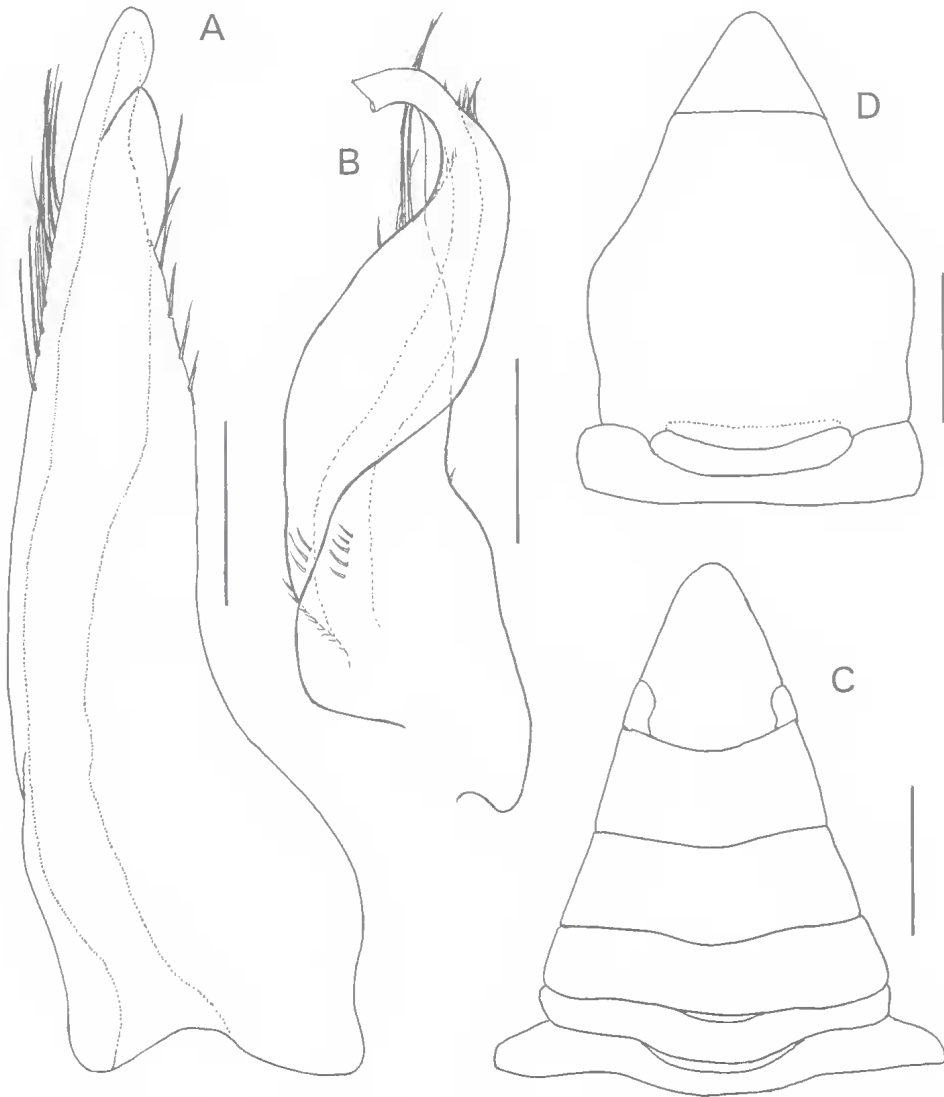


FIG. 2. A, C: *Odiomaris estuarius* sp. nov., holotype, A, first gonopod, C, abdomen. B, D: *Neorhynchoplax euryrostris* sp. nov., holotype, B, first gonopod, D, abdomen. Scale line A, B = 0.2 mm; C, D = 0.5 mm.

1873), which had been included by Lucas (1980) in *Amarinus*. *Odiomaris estuarius* sp. nov. fits well with the generic diagnosis of Ng & Richer de Forges (1996). The two genera appear close but the most important characters separating *Odiomaris* are: 1, G1 more slender, with two distinct distal processes, a longer corneous process and a shorter lobular elongation of the stem; and 2, the elongated triangular telson of the male abdomen which is significantly longer than wide at base (breadth c. 0.9 or less times length); whereas in *Amarinus* the telson is more-or-less

rounded and short, being much wider than long (breadth 1.2 or more times length).

Odiomaris estuarius differs from *O. pilosus* by: 1. The numerous thin spinules (or stiff setae) that cover the carapace margins, rostrum, pterygostomial regions, walking legs and chelipeds, which are so characteristic of *O. pilosus*, are absent; instead the carapace has only soft short fringing setae, and the legs and chelipeds have longer, feathered setae. 2. The rostrum is markedly wider and more spatulate than in *O. pilosus*; also the carapace rim which continues across

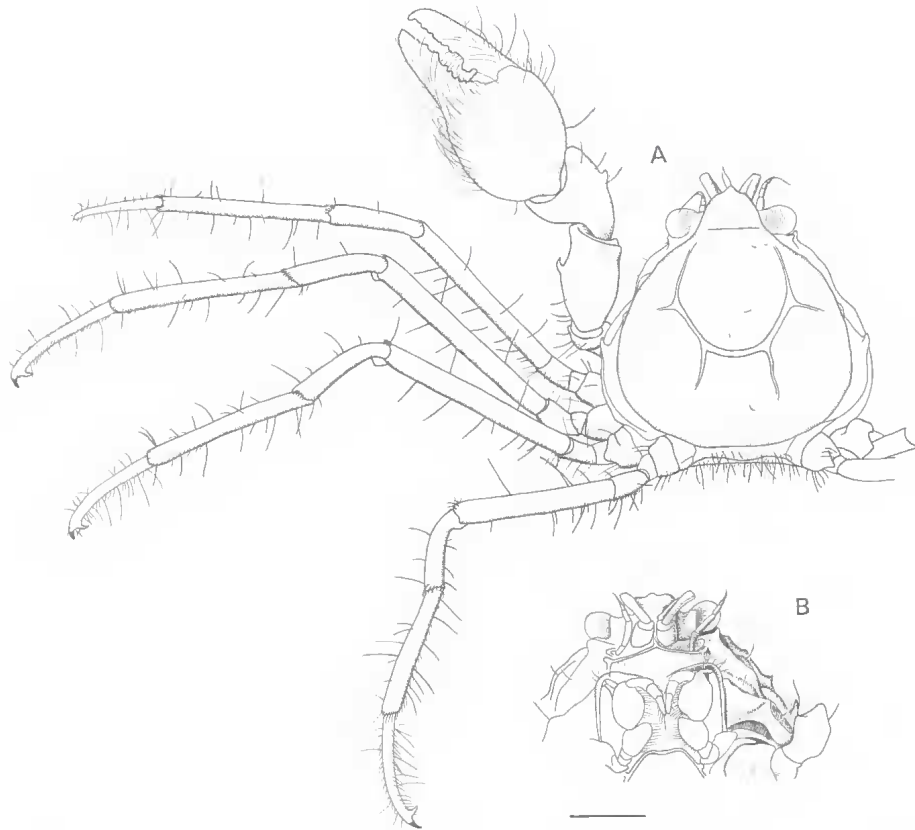


FIG. 3. *Neorhynchoplax euryrostris* sp. nov., holotype male. A, dorsal view; B, frontal view. Scale line = 1 mm.

behind the rostrum, is relatively flat, and does not project forward onto the rostrum as a rounded tongue as it does in *O. pilosus*. Seen in ventral view the rostrum is broad and rounded, and does not form a narrow V-shape as in *O. pilosus*. 3. The eyes are large with the corneas swollen; the postocular lobes are relatively small in size, not prominent in dorsal view, and afford little protection for the corneas. In *O. pilosus* the eyes are relatively smaller and the postocular lobes are prominent and project forward almost as far as the anterior edge of the cornea. 4. The posterior carapace grooves are almost indiscernible on *O. estuarius*, whereas on *O. pilosus* the transverse cardiac-intestinal groove is very distinct, and the cardiac region itself is strongly defined. 5. It seems that *O. estuarius* is a much smaller species (present specimens less than 6.4 mm c.b.) than *O. pilosus* (which from the literature attains at least 18 mm c.b.). The females of *O. estuarius* have a mature abdomen from 5.4 mm, and the males have mature gonopods from as little as 2.5 mm

c.b., although the largest male (4.6 mm) does not yet have inflated chelae.

***Neorhynchoplax euryrostris* sp. nov.**
(Figs 2B, D, 3)

MATERIAL EXAMINED. HOLOTYPE MNHN B25276, ♂ (3.5 x 3.4 mm), Dumbea, New Caledonia, 8.12.1993, P. Davie & B. Richer de Forges. PARATYPES QMW19911, 3 ♀ (3.1 x 2.9; 2.8 x 2.6; 2.8 x 2.6), 1 ♀ (3.0 x 2.8 mm). QMW20573, 1 ♀ (2.0 x 1.8 mm), 2 ovig. ♀ (3.3 x 3.1; 2.7 x 2.6 mm), Le Cap. MNHN-B25277, ♂ (2.7 x 2.7 mm) 3 ovig. ♀ (3.1 x 2.85; 3.3 x 3.1; 2.8 x 2.6 mm), all same data as holotype except as noted.

DESCRIPTION. Carapace width in males subequal to length (including rostrum); slightly wider in females (1.04-1.11 times length). Dorsal surface flattened, with gastric, cardiac and postbranchial regions convex; gastroducardiac, cervical and thoracic grooves well defined; branchiostegites sloping out slightly towards leg

bases; anterolateral margin with two low, blunt, triangular prominences; posterolateral angle with strong, curved, forwardly directed spine; rostrum unilobate, margins moderately converging over posterior two-thirds, more sharply converging anteriorly to prominent acute medial lobe; anterior rostral margin with short, curved fringing setae, and two or more long setae on apex of medial rostral lobe; eyes short, cornea swollen, fully visible in dorsal view; postocular lobes well-formed; antennules longer than rostrum when unflexed, basal segment with blunt lateral lobe bearing setae; interantennular septum a prominent narrow ridge, extending to base of medial rostral lobe; rostral keel clearly defined, rounded; antenna with long, very fine, flagellum; no antennal spine; pterygostomial region with strong dorsal ridge.

Ischium and merus of third maxilliped with strong setae along inner edges, ischium with distinct, acute, anteromedial lobe, palp stout, long, reaching ischio-merus junction, exopodite and epipodite conspicuous. Male chelipeds greater than 1.5 times longer than carapace width, much stouter than walking legs; propodus especially inflated and expanded ventrally; merus with conspicuous spine on outer ventral margin at about distal third, fingers slightly curved, meeting over distal half, small gape proximally; dactyl with large basal molar, and smaller medial tooth; fixed finger with about six small teeth over proximal half, largest medially; outer surface of palm and fingers of holotype male conspicuously setose; largest male with inflated chelae at 3.5 mm carapace width, smaller (2.7 mm) male with claws still immature. Female chelipeds stouter than walking legs but much smaller and less setose than male chelipeds, fingers meeting along most of length, each with row of even low teeth; walking legs long and slender, length of 2nd walking leg c. 2.5 times carapace width, dactyli slender and curved distally, with strong, recurved, subterminal tooth, but otherwise unarmed along ventral edge; walking legs setose, especially on ventral surface of dactylus.

Female abdominosternal region typical of *Neorhynchoplax* species, without pleopods, eggs apparently brooded within abdomen and cephalothorax cavity; segment 1 broad, segment 2 very short, segments 3-5 fused, forming major part of abdomen, telson broad, laterally with prominent, blunt, locking lobes, lateral margins more-or-less straight, a rounded apical lobe differentiated; female genital aperture subovate, with raised broad anterior and outer shoulder,

sited on sternum just posterior to base of cheliped; male abdomen with segments 1 and 2 short, fused article of segments 3-5 expanding moderately to maximum abdomen width then tapering uniformly to telson, telson triangular, apically rounded; G1 little curved, moderately stout, twisted, with a distinct thin terminal portion tapering to a point, and projecting towards sternum, setation as figured.

Body colour light brown to brown (alcohol preserved specimens); short setae on lateral carapace walls, sternum, chelipeds, walking legs and abdomen, with tendency to accumulate silt particles and take on clubbed appearance.

HABITAT. Estuarine to tidal freshwater; in crevices in rotting logs at edge of water at low tide; and under stones in freshwater.

DISTRIBUTION. Only known from the type material from the western coast of New Caledonia.

ETYMOLOGY. For its broad unilobate rostrum.

REMARKS. Ng & Chuang (1996) and Ng & Richer de Forges (1996) restrict *Elamenopsis* A. Milne Edwards, 1873, to only a few species most closely resembling the type, *E. lineatus* A. Milne Edwards, 1873, which is transversely broad with short walking legs, and very different in appearance from *Neorhynchoplax euryrostris* sp. nov. They resurrected *Neorhynchoplax* for the bulk of species included in *Elamenopsis* by Lucas (1980) and subsequent authors. *Neorhynchoplax euryrostris* is easily recognised by the shape of the rostrum. Only 4 species of *Elamenopsis* (*sensu* Lucas, 1980) have a unilobate rostrum *viz.* *E. lineata* A. Milne Edwards, 1873, *E. inermis* (Takeda & Miyake, 1971), *E. nasalis* (Kemp, 1917) and *E. minima* Lucas & Davie, 1982. Of the three species that properly belong in *Neorhynchoplax*, *E. nasalis* and *E. minima* are very different in having thin spine-like rostrums; and *E. inermis* has only a very short, very narrow, triangular rostrum.

One feature which *Neorhynchoplax euryrostris* and *N. inermis* have in common, which does suggest a close alliance, is the strongly twisted G1, although it differs markedly in detail between the two species.

ACKNOWLEDGEMENTS

Peter Davie is very grateful to the French Embassy for providing funds to help undertake the field collecting in New Caledonia. Ms Alison Hill

is especially thanked for drawing the dorsal and frontal views of the two new species. Peter Ng provided valuable criticism of the manuscript.

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